Please type a plus sign (+) inside this box → [+]

PTO/SB/21 (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Applicati n Number	09/888,309
Filing Date	June 21, 2001
First Named Inventor	Melissa K. Carpenter, et al.
Group Art Unit	1632
Examiner Name	Thaian N. Ton
Total Number of Pages in This Submission: 9	Attorney Docket Number: 090/002

ENCLOSURES *(check all that apply)*

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment / Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Assignment Papers *(for an Application)*
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address (1 page)
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] After Allowance Communication to Group
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) *(please identify below)*:

Preliminary Amendment (6 pages), Version with Markings to Show Changes Made (2 pages)

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	J. Michael Schiff, Registration No. 40,253
Signature	
Date	February 15, 2002

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand delivered to the Commissioner for Patents, Washington, DC 20231 on this date: February 19, 2002

Typed or printed name	Shari Hall White		
Signature	Shari Hall White	Date	February 19, 2002

CERTIFICATE OF HAND DELIVERY

I hereby certify that this paper is being delivered by hand to the U.S. Patent Office in accordance with 37 CFR § 1.6(b), addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231, on the date indicated.

Sharon Hall White — Name

February 19, 2002 — Date

Prelim Amdt
5/A
MW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of: M. Carpenter et al.	Art Unit: 1632
Serial No.: 09/888,309	Examiner: Thaian N. Ton, Ph.D.
Filing Date: June 21, 2001	
For: DOPAMINERGIC NEURONS OBTAINED FROM HUMAN EMBRYONIC STEM CELLS	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicants understand that this application has not yet been examined on the merits. Accordingly, please enter the enclosed amendments and remarks into the application, pursuant to 37 CFR § 1.115(b)(1).

AMENDMENTS

Please delete the current TITLE of the application and replace it with the following:

DOPAMINERGIC NEURONS OBTAINED FROM HUMAN EMBRYONIC STEM CELLS

Please cancel claims 1-20 without prejudice, and replace them with the following new claims:

23. A method for producing a neural cell population from human embryonic stem (hES) cells, comprising culturing progeny of the hES cells in a medium containing one or more added TGF-β Superfamily Antagonists so as to produce a population in which at least 50% of the cells express either polysialylated NCAM or β-tubulin III.

24. The method of claim 23, wherein the progeny are cultured in a medium containing noggin.

25. The method of claim 23, wherein the progeny are cultured in a medium containing follistatin.

26. The method of claim 23, wherein the medium further contains a neurotrophin.

27. The method of claim 26, wherein the neurotrophin is NT-3 or BDNF.

28. The method of claim 23, wherein the medium further contains a combination of factors selected from differentiation factors, neurotrophic factors, and survival factors.

29. The method of claim 23, comprising differentiating the hES cells by plating them onto a solid surface without forming embryoid bodies or cell aggregates.

30. The method of claim 29, wherein the solid surface comprises fibronectin or a polycation.

31. The method of claim 23, wherein at least 10% of the MAP-2 positive cells in the produced

population express tyrosine hydroxylase.

32. The method of claim 23, further comprising combining the cell population with a compound, determining any phenotypic or metabolic changes in the cell that result from contact with the compound, and correlating the change with cellular toxicity or modulation caused by the compound.

33. The method of claim 23, further comprising identifying an mRNA expressed at a different level in the neural cell population, relative to the level in undifferentiated hES cells; and preparing a polynucleotide comprising a nucleotide sequence of at least 30 consecutive nucleotides contained in the identified mRNA.

34. A set of two cultured cell populations, consisting of:

a first cell population comprising undifferentiated cells from a line of human embryonic stem (hES) cells; and

a second cell population, comprising progeny of the hES cells in a medium containing one or more added TGF-β Superfamily Antagonists.

35. A set of two isolated cell populations, consisting of:

a first cell population comprising undifferentiated cells from a line of human embryonic stem (hES) cells; and

a second cell population, comprising at least ~10% hES derived neural cells, identifiable by the criteria that they are progeny of said hES cell line and express both MAP-2 and tyrosine hydroxylase.

36. The set of cell populations of claim 35, wherein the second population has been produced from cells of the first population (or their progeny) by the method of claim 23.